

## REMARKS/ARGUMENTS

Claims remaining in the instant application are numbered 1-30. Claims 1-30 are presently rejected. The Applicants respectfully request that the instant application be reconsidered in view of the amendments and following remarks.

### *Claim Rejections – 35 USC § 103*

In the December 23, 2004 Office Action, claims 1-30 are rejected under 35 U.S.C. § 103 as being unpatentable over Geva et al., US Patent No. 6,437,372 (hereinafter Geva).

With regard to a rejection under 35 U.S.C. § 103, MPEP § 2143.03 sets forth that

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). “All words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, than any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Example independent claim 1 of the instant patent application expressly recites:

1. An apparatus, comprising:

an active region of an optical waveguide disposed in a semiconductor layer, the active region including a p doped region and an n doped region; and

*an insulating region disposed in the semiconductor layer surrounding the active region in the semiconductor layer, the insulating region electrically isolating the active region of the optical waveguide from a passive region of the optical waveguide disposed in the semiconductor layer, wherein an optical beam is to be directed through the optical waveguide and through the active region is to be phase shifted in response to a modulated charge region in the active region in the optical waveguide.*

Therefore, claim 1 expressly recites the insulating region surrounds the active region in the semiconductor layer. To illustrate, attention is kindly directed to the example

illustrated in the Applicants' Figure 2. As shown in the illustrated example, insulating region 109 surrounds an active region 105, thereby electrically isolating the active region 105 from a passive region 107, as expressly recited in the Applicants' presently claimed invention.

Geva is directed to diffusion barrier spikes for III-V structures. Geva fails to disclose, teach or even fairly suggest limitations summarized above as expressly recited in the Applicants' presently claimed invention. For example, Geva fails to disclose, teach or fairly suggest *an insulating region disposed in the semiconductor layer surrounding the active region in the semiconductor layer, the insulating region electrically isolating the active region of the optical waveguide from a passive region of the optical waveguide disposed in the semiconductor layer*, as expressly recited in the Applicants' presently claimed invention.

The Applicants note that on page 3 of the May 11, 2005 Office Action, Geva is characterized as disclosing "an active region (302, 303, 304) disposed in semiconductor material (301) including a p-doped region (304) and an n-doped region (302)." Geva is further characterized as disclosing "an insulating region (305) disposed in the semiconductor layer in the active region." However, as can be seen in for example Figure 3, Geva fails to disclose, teach or even fairly suggest that insulating region (305) surrounds the active region (302, 303, 304) to electrically isolate the active region from a passive region.

Therefore, Geva fails to disclose, teach or fairly suggest all of the expressly recited claim limitations, as required by to establish *prima facie* obviousness of a claimed invention. Accordingly, claim 1 is not obvious in view Geva. Independent claims 13 and 20 include similar limitations are therefore also not obvious in view of Geva for similar reasons.

Claims 2-12 are all dependent claims that depend from independent claim 1. Claims 14-19 are all dependent claims that depend from independent claim 13. Claims 21-30 are all dependent claims that depend from independent claim 21. Independent claims 1, 13 and 20 are patentable and nonobvious for the reasons stated earlier. As set forth in MPEP § 2143.03 and *In re Fine*, if an independent claim is nonobvious under 35 U.S.C. 103, claims depending therefrom are also nonobvious. Therefore, dependent claims 2-12, 14-19 and 21-31 are nonobvious by virtue of their dependencies. Accordingly, the Applicants kindly request that the instant section 103 rejections be withdrawn.

### **CONCLUSION**

In view of the foregoing amendments and remarks, Applicants believe the applicable rejections have been overcome and all claims remaining in the application are presently in condition for allowance. Accordingly, favorable consideration and a Notice of Allowance are earnestly solicited. The Examiner is invited to telephone the undersigned representative if the Examiner believes that an interview might be useful for any reason.

### **CHARGE DEPOSIT ACCOUNT**

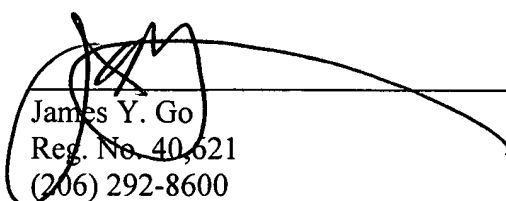
It is not believed that extensions of time are required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a). Any fees required

therefore are hereby authorized to be charged to Deposit Account No. 02-2666. Please credit any overpayment to the same deposit account.

Respectfully submitted,

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